

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-31. (Previously Canceled)

32-38. (Canceled Herein)

39-40. (Previously Canceled)

41. (Canceled Herein)

42. (Previously Canceled)

43-45. (Canceled Herein)

46-47. (Previously Canceled)

48. (Canceled Herein)

49. (Previously Canceled)

50. (Canceled Herein)

51. (Previously Presented) An intervertebral disc prosthesis for replacing the natural disc of a human spine, comprising:

a first end plate securable to a first vertebral body, the first end plate comprising a second bearing surface comprising a second straight section;

a second end plate securable to a second vertebral body; and

a nucleus positionable between the first and second end plates, the nucleus comprising a first bearing surface that articulates with the second bearing surface, the first bearing surface comprising a first straight section sloping between and contiguous with first and second convexly curved sections of the first bearing surface, the nucleus further comprising a planar third bearing surface opposite the first bearing surface;

wherein the height of the nucleus between the first bearing surface and the third bearing surface at the junction of the first convexly curved section and the first straight section is greater than the height of the nucleus between the first bearing surface and the third bearing surface at the junction of the second convexly curved section and the first straight section;

wherein the first straight section rests against the second straight section in a relative orientation between the first and second end plates that provides a preferred lordotic angle between the first and second vertebral bodies.

52. (Previously Presented) The intervertebral disc prosthesis of claim 51, wherein the second end plate comprises a fourth bearing surface, wherein the fourth bearing surface articulates with the third bearing surface.

53. (Previously Canceled)

54. (Previously Presented) The intervertebral disc prosthesis of claim 51, wherein an anterior portion of the nucleus has greater thickness than a posterior portion of the nucleus to correct lordosis, wherein the preferred lordotic angle is greater than zero.

55. (Previously Presented) The intervertebral disc prosthesis of claim 51, wherein the preferred

lordotic angle is selected from the group consisting of 0, 3 and 6 degrees.

56. (Previously Presented) The intervertebral disc prosthesis of claim 51, wherein at least one of the first and second end plates further comprises a stop member positioned to abut the vertebral body to prevent the prosthesis from migrating from its intended position between the first and second vertebral bodies.

57. (Previously Canceled)

58. (Previously Presented) An intervertebral disc prosthesis for replacing the natural disc of a human spine, comprising:

- a first end plate securable to a first vertebral body, comprising:

- a plurality of bone engagement features shaped to penetrate bone;

- a perimeter wall;

- a second bearing surface comprising: a planar portion intersecting the perimeter wall;

- a second straight section extending along the sagittal midline of the bearing surface; and a pair of arms which protrude from the planar portion on opposing lateral sides of the second straight section;

- a second end plate securable to a second vertebral body, comprising:

- a plurality of bone engagement features shaped to penetrate bone; and

- a fourth bearing surface that is substantially entirely flat; and

- a nucleus positionable between the first and second end plates, the nucleus comprising:

- a first bearing surface that articulates with the second bearing surface, the first bearing surface comprising a first straight section sloping between and contiguous with first and second curved sections of the first bearing surface, wherein the first straight section rests against the second straight section in a relative orientation between the first and second end plates that provides a preferred lordotic angle between the first and second vertebral bodies, the nucleus further comprising a third bearing surface that articulates with the fourth bearing surface to permit at least one of medial-lateral and anterior-posterior articulation between the nucleus and the second end plate.

59. (Previously Canceled)

60. (Previously Presented) The intervertebral disc prosthesis of claim 58, wherein an anterior portion of the nucleus has a greater thickness than a posterior portion of the nucleus to provide the preferred lordotic angle.

61. (Previously Presented) The intervertebral disc prosthesis of claim 58, wherein at least one of the first and second end plates further comprises a stop member positioned to abut the vertebral body to prevent the prosthesis from migrating from its intended position between the first and second vertebral bodies.

62. (Previously Canceled)

63. (Previously Presented) The intervertebral disc prosthesis of claim 58, wherein the second endplate comprises a trough, wherein the trough is larger than the third bearing surface in at least one of the anterior-posterior and medial-lateral dimensions to permit translation between the nucleus and the second end plate.

64-66. (Canceled herein)

67. (Previously Canceled)

68-69. (Canceled herein)

70. (Previously Presented) The intervertebral disc prosthesis of claim 58, wherein the nucleus is formed of an elastomer.

71. (Previously Presented) The intervertebral disc prosthesis of claim 70, wherein the elastomer is a low friction elastomer.

72. (Previously Presented) The intervertebral disc prosthesis of claim 52, wherein the third bearing surface on the nucleus articulates with the fourth bearing surface on the second end plate to permit axial rotation between the nucleus and the second end plate, the fourth bearing surface shaped to allow for axial rotation with stops beyond the limits of normal motion.

73. (Previously Presented) The intervertebral disc prosthesis of claim 60, wherein the preferred lordotic angle is selected from the group consisting of 0, 3 and 6 degrees.